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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,507	11/19/2003	Ronald D. McCallister	1826-310RI	1244
7590 Lowell W Gresham Meschkow & Gresham PLC 5727 North Seventh Street Suite 409 Phoenix, AZ 85014			EXAMINER CORRIELUS, JEAN B	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 07/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/718,507

Applicant(s)

MCCALLISTER ET AL.

Examiner

Jean B Corrielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 6/11/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-15, 17-29 and 38-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14, 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 2-5, 11-13, 15, 17, 18, 21-23, 28, 29, 38-46, 50, 52-54, 56-60, 63 and 64 is/are rejected.
- 7) ☒ Claim(s) 6-10, 24-27, 47-51, 55, 61 and 62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application-from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/6/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/11/07 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. Applicant's response has overcome the 112 rejection of claims 43 and 44.
3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 38-40, 46 and 60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 38, recites the delay is a "fixed delay". However, the specification, as filed, does not provide proper support for such limitation as claimed. The same comment applies to claims 39-40, 46 and 60.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 3-5, 11, 12, 15, 17, 18, 21-23, 28-29, 38-41, 43-46, 50, 52-54, 56-60, 63-64 are rejected under 35 U.S.C. 102(a) as being anticipated by May et al.

As per claim 5, May teaches a transmitter circuit see page 2474, col. 1, line 4 comprising inherently a modulated signal generator for generating a first modulated signal  $s(t)$  (note that in order to generate the modulated signal  $s(t)$  a pulse spreading filter has to be used) conveying to be communicated data having a first bandwidth and having a first peak-to-average amplitude ratio see page 2474, col. 2, lines 2-8 and page 2475, col. 1, lines 36-38; generating a constrained bandwidth error signal  $K(t)$  in response to said first modulated signal  $s(t)$  (note that in order to generate the error signal  $K(t)$ , a constrained envelope generator having a pulse spreading filter has to be used, hence such an element is inherent in May et al) see page 2475, col. 2, line 1; combining said error signal  $K(t)$  with the modulated signal  $s(t)$  see page 2475, col. 2, last three equations (note that in order to combine the signal a combining circuit has to be used, hence a combining circuit is inherent in May) to produce a second modulated signal conveying said to be communicated data having said first BW and said first PAR see page 2475, col. 1 section B- page 2476, col. 1, first full paragraph.

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In addition, as noted in the inventor submission filed on 7/5/05, a delay coupled between said modulated signal generator and said combining circuit to delay said first modulated signal into synchronism with said constrained bandwidth error signal, is inherent. In addition, May teaches a linear amplifier see fig. 1 that shows the linearity of the amplifier up to the saturation point in addition, note the inventor's submission, dated 8/28/06 that clearly states that the May's reference teaches the linerarizer limitation.

As per claim 3, the combining combines both the filtered signal and the error signal to reduce a peak magnitude component of said filtered signal see page 2475, col. 1 section B- page 2476, col. 1, first full paragraph.

As per claim 4 the signal is a complex signal hence the combining circuit has to be a complex summing circuit in order to combine the complex signal.

As per claim 11, the filtered signal stream is a stream of complex signal exhibiting a peak magnitude component and said envelope generator determines when ones of said peak magnitude components exceed a threshold see fig. 2.

As per claim 12, page 2475 first full paragraph on the left column, May teaches that the transmitter generates all possible signals (phase point) corresponding to a data sequence (constellation) and chose the most suitable one for transmission (selecting based on a threshold see fig. 2) in order to perform such a signal translation (mapping) a mapper has to be used in May. In addition, the threshold is equal to a magnitude of said maximum magnitude phase point see fig. 2.

As per claim 15, see claim 5 above.

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As per claim 17, the combining step comprising the step of reducing a peak magnitude component of said filtered signal. See page 2475 last full paragraph on the left column of the May reference.

As per claim 18, see claim 5 above in addition, May teaches that said generating comprises filtering an error signal stream having one error pulse per unit baud interval to produce said error signal, said filtering step spreading energy from each pulse in said error signal stream over a plurality of unit interval see May page 2475 right column.

As per claim 21, see claim 5 above in addition, May teaches that said filtered signal stream includes two or more complex digital values per unit baud interval, said complex digital values in said filtered signal stream exhibiting local peak magnitudes; and said generating step is configured so that said constrained-bandwidth error signal stream includes two or more complex values per unit baud interval, said complex values in said constrained-bandwidth error signal stream being responsive to said local peak magnitudes of said filtered signal stream so as to spread energy from selected ones of said local peak magnitudes over a plurality of unit baud intervals of said constrained-bandwidth error signal stream see fig. 2 of the May reference.

As per claim 22, said envelope signal is continuously transmitted see fig. 2.

As per claim 23, see claim 12.

As per claim 28, see claim 13.

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As per claim 29, the constellation is an amplitude and PSK constellation  
see page 2477 right hand column.

As per claim 38, applicant submission filed on July 6, 2005 stated that the  
delay in May et al is half the pulse shape duration (i.e. fixed).

As per claim 39, see claim 38.

As per claim 40, see claim 38.

As per claim 41, see claim 5.

As per claim 43, see claim 3.

As per claim 44, see claim 4.

As per claim 45, see claim 5.

As per claim 46, see claim 38.

As per claim 52, see claim 11.

As per claim 53, see claim 12.

As per claim 54, see claim 12.

As per claim 56, see claim 5.

As per claim 57, see claim 5.

As per claim 58, see claim 3.

As per claim 59, see claim 18.

As per claim 60, see claim 38.

As per claim 63, see claim 21.

As per claim 64, see claim 22.

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over May et al in view of Hedberg et al US patent No. 6,266,320.

As per claim 2, as applied to claim 5 above, May teaches every feature of the claimed invention but does not explicitly teach the pulse shaping filter is a Nyquist type spreading filter. Hedberg teaches that the modulator includes a Nyquist pulse shaping (spreading) filter 120a. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in May et al so as to take advantage of its enhanced technological features.

As per claim 42, see claim 2.

9. Claims 13 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over May et al in view of Falconer US patent No. 5,159,608.

As per claim 13, as applied to claim 5 above, May teaches every feature of the claimed invention but does not explicitly teach an interleaver coupler to the mapper. Falconer teaches the further limitations of interleaver 108 coupled to the mapper 112. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in May in order to minimize signal error in reconstructing the received signal at the receiver.

As per claim 28, see claim 13.



### **Claims Objection**

10. "Nyquist-type" is mistyped throughout the claims as "Nvquist-Type", see for instance claim 42.

### ***Allowable Subject Matter***

11. Claims 6-10, 24-27, 47-51, 55, 61 and 62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 14 and 19-20 are allowed

### ***Response to Arguments***

13. Applicant's arguments filed 6/11/07 have been fully considered but they are not persuasive. Applicant argues that May only teaches a non-linear amplifier as oppose of a linear amplifier as recited in the claims. However, it is noted that May clearly show a waveform (See May's reference page 2474, fig. 1) which is linear up to the saturation point, hence the May's reference teaches a **linear amplifier**. Hence, any other argument directed towards the linearizing limitation is moot in view of such a teaching. In addition, the argument with respect to Dent is moot in view of the above new ground of rejection. Applicant further argues that even if may inherently disclosed the delay limitation as set forth in the claims, which it does not, May would not enable one of ordinary skill in the art to

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carry the claimed invention. Such point of argument is not convincing because the May reference would enable one skill in the art to design a circuit that would include a delay device to implement the teaching at page 2475, second col., last three equations that requires the signal to be delayed.

The argument made with respect to claims 2, 13, 28 and 42 is moot in view of the above new ground of rejection. The rejection of claims 9 and 50 has been withdrawn in view of the applicant's comment.

#### ***Response to Amendment***


14. The Declaration under 37 CFR 1.132 filed 6/11/07 is insufficient to overcome the rejection of claims 2-11, 13-20 based upon the inventor's submission filed on 7/6/05 and 8/28/06 as set forth in the last Office action because after further consideration of the May reference, it is the examiner's position that the May reference clearly teach the use of a linear amplifier. See May's reference page 2474, fig. 1 in which fig. 1 shows a waveform which is linear up to the saturation point. Hence the May's reference teaches the use of a linear amplifier. In addition the affidavit alleged that feeding May's modulated signal through a **fixed** delay will not correctly aligned the amplitude peaks. Such argument suggests at least that a **non-fixed delay** is used in the May's reference therefore implementing a fixed delay (inherently taught by the May reference) in the May's system could be easily done without undue experimentation.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jean B Corrielus  
Primary Examiner  
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7-13-07